

# Poultry Production and Protection

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## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Poultry Production and Protection

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	20%	20%	20%	20%
305	Animal Physiological Processes	10%	10%	10%	10%
306	Environmental Stress in Animals	10%	10%	10%	10%
307	Animal Management Systems	30%	30%	30%	30%
311	Animal Diseases	20%	20%	20%	20%
315	Animal Welfare/Well-Being and Protection	10%	10%	10%	10%
	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## V(C). Planned Program (Inputs)

### 1. Actual amount of professional FTE/SYs expended this Program

Year: 2008	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	1.5	0.0	2.0	0.0
<b>Actual</b>	4.2	0.0	1.0	0.0

### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
<b>Smith-Lever 3b &amp; 3c</b> 361245	<b>1890 Extension</b> 0	<b>Hatch</b> 100542	<b>Evans-Allen</b> 0
<b>1862 Matching</b> 361245	<b>1890 Matching</b> 0	<b>1862 Matching</b> 100542	<b>1890 Matching</b> 0
<b>1862 All Other</b> 0	<b>1890 All Other</b> 0	<b>1862 All Other</b> 0	<b>1890 All Other</b> 0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

Ammonia emissions from broiler houses were measured to determine concentrations at various distances from the broiler houses. This research demonstrated that ammonia concentrations diminish to close to background levels 500 feet from broiler houses. Testing of one new litter amendment product (Ferric Sulfate) continued on a commercial broiler farm over a period of 6 flocks (1 year). This product appears to reduce ammonia well and due to its activation characteristics may provide longer control on ammonia generation rates than currently used products. Testing and validation of a new ammonia measurement method being developed by a third party was conducted under commercial conditions. Field research under commercial conditions and educational programs were conducted to demonstrate the benefits of using attic inlets. Attic inlets draw air from the attic that has been heated by radiant heat from the sun shining on the poultry house roof. The use of these inlets has resulted in a 20% increase in ventilation without a 20% increase in cost. A result of this is drier litter that in turn reduces ammonia generation rate resulting in lower ammonia concentrations.

Research on phytate phosphorous and phytase enzyme was conducted. Educational programs were conducted on nutrient management planning (NMP) which included phosphorous management strategies to reduce environmental impact. An example of these strategies was the development and implementation of a Phosphorous Index to assure land application of poultry litter did not overload soils with phosphorous.

Field research in energy efficient brooding and ventilation methods was conducted on commercial poultry farms. Educational meetings with poultry industry personnel and poultry farmers were conducted throughout the state. Newsletters extending this timely information were distributed nationally.

Educational meetings have been conducted. Agrosecurity and biosecurity manuals were distributed to participants of meetings. Powerpoint presentations of biosecurity training materials have been made available to poultry industry personnel.

Research has been and continues to be conducted on food safety as related to poultry. Evaluation of novel chemistry techniques have been conducted in research and field studies. Individual processing plants in GA have been visited and provided assistance.

Research was conducted feeding broiler breeder pullets on a daily basis rather than the conventional industry practice of every other day. Every day feeding increased egg production by 15-17 eggs per hen compared to typical industry practices. splitting the daily feed allotment into two feedings increased egg production by another 4-5 eggs per hen. follow-up studies are now underway to understand why feeding regimes affect egg production.

**2. Brief description of the target audience**

The target audience of this planned program include county extension agents, poultry producers, and poultry company professionals.

**V(E). Planned Program (Outputs)****1. Standard output measures****Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	175	1200	200	0
2008	850	6623	51	0

**2. Number of Patent Applications Submitted (Standard Research Output)****Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	0
2008:	0

**Patents listed**

### 3. Publications (Standard General Output Measure)

#### Number of Peer Reviewed Publications

	Extension	Research	Total
<b>Plan</b>	0	0	
2008	0	0	4

### V(F). State Defined Outputs

#### Output Target

##### Output #1

#### Output Measure

Number of educational contact hours generated from formal educational programs presented to county extension agents by state faculty directly associated with this planned program.

Year	Target	Actual
2008	50	15

##### Output #2

#### Output Measure

Number of educational contact hours generated from formal educational programs presented directly to clientele by state faculty directly associated with this planned program.

Year	Target	Actual
2008	150	40

##### Output #3

#### Output Measure

Number of significant publications including referred journals articles, bulletins and extension publications.

Year	Target	Actual
2008	7	18

**V(G). State Defined Outcomes**

O No.	Outcome Name
1	Percentage of program participants reporting increased knowledge after program participation.
2	Percentage of program participants who indicated a plan to adopt one or more of the practices recommended in this program.
3	Number of invited presentations by faculty as a direct result of the success of this program.
4	Increase in the farm gate value of poultry production in Georgia. Value reported annually in millions of dollars.

**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
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**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
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**V(H). Planned Program (External Factors)**

**External factors which affected outcomes**

Economy

Public Policy changes

Government Regulations

Competing Public priorities

Competing Programmatic Challenges

## **Brief Explanation**

The downturn in the economy has caused the loss of an important faculty resource that was key to this project. We will continue to address this issue but will be forced to do so with reduced personnel and resources.

Dramatic increases in the cost of phosphorous (P) to supplement poultry diets have increased the use of enzymes. This has resulted in less P in poultry litter. Increased commercial fertilizer costs have also resulted in poultry litter being more valuable as a fertilizer and it being used more effectively. Nitrogen (N) utilization and N-based NMP have been competing issues with phosphorous utilization. Unexpected escalation of commercial fertilizer prices has driven much of the current use strategies relative to poultry litter. In addition, poultry producers have gone longer between cleaning out houses. Although this has not resulted overall in more phosphorous being generated or land applied, it has resulted in higher phosphorous levels in litter samples tested. Some modification of the percent reduction in poultry litter samples Custom Output Measure will need to be made.

Wide swings in energy costs the past 12 months have made this project even more critical to poultry farmers. Poultry specialists were spread very thin due to demands from clients and decreased numbers of specialists. Other priorities took time away from this important program.

Biosecurity procedures discourage poultry farmers from coming into contact with people or equipment that have poultry or other birds. Concerns within the poultry industry about poultry farmers being brought together for biosecurity meetings have limited direct training. In addition, economic difficulties within the poultry industry have focused their priorities elsewhere.

Proposed food safety regulations could change the metrics originally proposed. The downturn in the economy has limited resources available to conduct this program and industry priorities are focused elsewhere.

The economic downturn has reduced faculty and operating resources available to support this program. Reduced staffing has limited the time and resources available to support this program. Dramatic increases in feed prices have made increasing egg production even a higher industry priority.

## **V(I). Planned Program (Evaluation Studies and Data Collection)**

### **1. Evaluation Studies Planned**

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

### **Evaluation Results**

Ammonia measurements were collected at various distances from poultry houses to assess ammonia emissions in real world terms. Modeling of ammonia emission dispersion was completed.

Evaluations of ferric sulfate as a litter treatment for reducing ammonia generation and soluble phosphorous formation in commercial broiler houses were conducted.

Evaluations of workshops were completed. Program participants ranked the value of workshops very highly. In addition, government and industry funding agencies have provided evidence of the impact of this work by volunteering to supply resources for energy conservation projects. Poultry farmers have adopted new ventilation inlet systems that have been recommended.

Evaluation will be based on negative results; that is the failure of AI to infect Georgia poultry flocks will be considered a successful outcome. Data will be collected from participants in trainings and state and federal agencies responsible for poultry health.

Problem solving activities were able to prevent several poultry processing plants from failing additional food safety inspections and prevented possible plant closings.

Thus far only research trials have been conducted. Field trials are being conducted with industry partners.

### **Key Items of Evaluation**